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MAY VOUGHT XOS2U-1 OBSERVATION SCOUT FOR LAND AND SEA 1939

Southern Light

The Birdmen's Perch

Right now we're wondering if everybody has written for his or her *free* copy of the 5th edition of the Gulf Aviation Atlas. It's a swell big book packed with flying info, maps, charts, pictures, and air history. The supply is getting low, so you better send for yours right away. Write—a penny post card will do—to:

MAJOR AL WILLIAMS, alias "Tattered Wing-Tips,"
Mgr. Gulf Aviation Products, Gulf Bldg., Pittsburgh, Pa.

THE M-M-MYSTERY SHIP

Here's one that was sent us by Ben Martin of Ladysmith, Wis. Thank'ee, Ben!

An international spy (Platinum Blonde

type No. 1) recently unearthed the following data on a new bomber built in a secret factory in one of the Balkan States.

"Model 'X' has a motor 9' long. The fuselage is equal to the sum of the length of the motor and ½ the fuselage. The length of the tail is the motor plus ½ the tail. The whole plane, naturally, is equal to the sum of the motor, tail, and fuselage."

In the general's other pocket she found the following:

"To find the wingspread, multiply the square root of the square root of the length of the plane by the length of the fuselage and add the length of the motor. And the speed may be represented by the sum of those two specifications which, plus one, are equal to another of the specifications plus one squared."

Being a smart girl—although a blonde—she figured out the answers and decided getting the blueprints would not be worth the effort. What do you think? Send in your figures to T.W.T. for checking. Official version by return mail.

DOING IT THE HARD WAY

There are two ways to do everything . . . the easy . . . and the hard.

Take refining our Gulfpride Oil for instance. We could be satisfied with ordinary methods that remove most of the impurities. But instead we use an *extra*, added refining step—the famous Alchlor process. This remarkable process—exclusive with Gulf—digs down so deep into the 100% Pure Pennsylvania that it removes still more dirt, sludge, and carbon-formers. It may be the hard way but, when you think what they can do to a motor . . . boys, it's worth it!

THIS MONTH'S WHOPPER

Dear Major:

Of course we all know about the marvelous qualities of Gulf Aviation Gas when used as a mouthwash. But I claim to be the first to discover that it actually contains vitamins!

Out at our local flying field we have a mascot named Oscar. Oscar is a mosquito. Mind, he isn't one of those pigmy species that live in Florida, Louisiana, and New

Jersey. And which weigh only about five pounds apiece. Oscar is a real *California* mosquito.

We first found Oscar in one of the hangars drinking out of a can of kerosene. He wasn't very husky then but after we adopted him and he got his meals of Gulf Aviation Gas regularly, he really began to *GROW!* (Everything grows in California.)

We sure were proud of Oscar. But soon he got so big his meals presented a serious financial problem. We tried curtailing them but he began attacking the planes and drinking right out of the tanks. At last the boys decided we would have to stop using Gulf Aviation Gas or get rid of Oscar. When the coin flipping was over (it went to 11,111,112 out of 22,222,222)

we set a trap for the poor beastie. What we used was a case and a half of dynamite saturated with Gulf Aviation Gas. We attached a long fuse, lit it, and hid to await developments.

Oscar must have suspected something for he kept off a good distance for a while. But finally the aroma of that G.A.G. was too much for him. In he charged and gobbled down that dynamite before you could say "contact!" And no sooner had he swallowed it than it exploded with a roar that could be heard in Zanzibar.

Poor Oscar! I'm telling you, Major, we had a mighty sick mosquito on our hands for a couple of weeks.

Norman McEwan

Gulf Oil Corporation and Gulf Refining Company . . . makers of

GULF **GULF AVIATION PRODUCTS**

You wouldn't shoot a bullet sideways
MENASCO
IN-LINE
ENGINES

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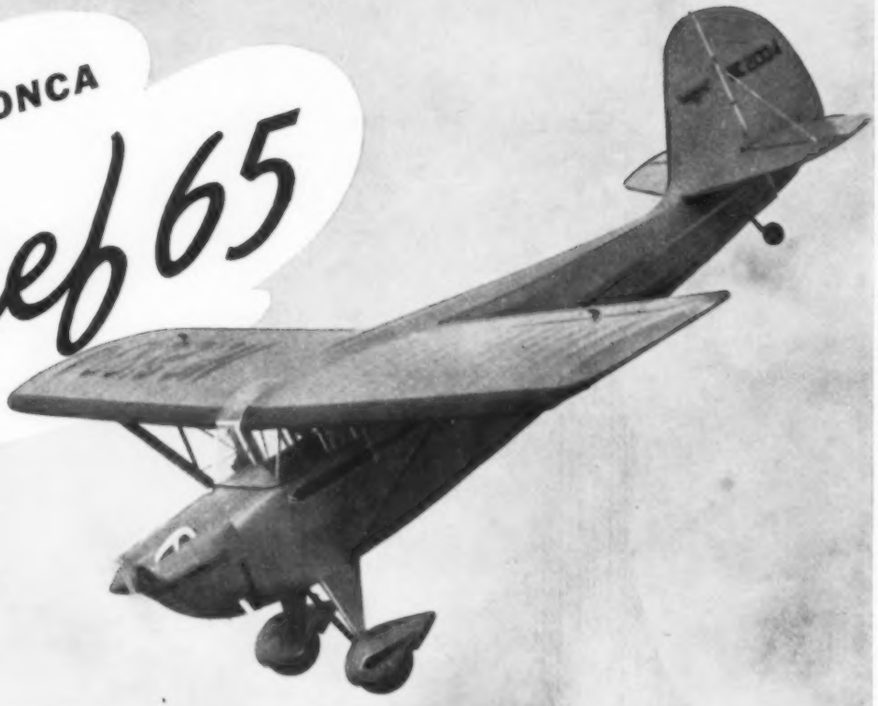
AERONCA *Chief 65*



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AERONAUTICAL CORP. OF AMERICA · D-6 LUNKEN AIRPORT **CINCINNATI, O.**

A NEW AVIATION SCHOOL IN TEXAS

Formerly Curtiss - Wright Flying School

$88,000.00 Hangar - 275 Acres of Texas' Best Land

FOR almost thirteen years I have been General Manager-Secretary-Treasurer for another school in Dallas. I have sold my interests in the same to my associate, Major Bill Long, and have bought the Curtiss-Wright Airport which is half way between Dallas and Fort Worth. This airport is one of the best in the country and it is my intention to make it meet the new day in Aviation in every way.

ENROLLMENTS will be accepted for courses leading to Government License; also, flying time by the hour at very reasonable price.

THE owner of this school has been in this work for the past thirteen years and has graduated over 1700 students who have made good and now have responsible positions on the ground or in the air. This school will be operated on a fair and square basis for its students and patrons just the same as I operated the school with which I was formerly connected.

I Will Be Glad to Hear From Those Interested in Flying or Mechanics

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GRAND PRAIRIE, TEXAS

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Southern Flight

MAY, 1939 VOL. XI. No. 5

The complete monthly digest of aeronautics in the South and Southwest.

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★ ★ ★ ★ ★ Just Among Ourselves ★ ★ ★ ★ ★

Primary Training

FOR the first time in aviation history the United States Army has come to recognize the inestimable value of commercial aviation to the national defense. This recognition, which all of us have wanted for years, represents one of the most significant developments in the fast moving drama that is American aeronautics today. Not only has the U. S. Army Air Corps picked our outstanding commercial air schools to handle primary flight and mechanic training under Army supervision but substantial orders have been awarded to many of our manufacturers heretofore limited to the production of aircraft for the civilian market. The inclusion of these two branches of commercial aviation into the Army's expansion program may be construed by some observers as an emergency measure but we opine that it is the result of some mighty fine brain work from the powers who are charged with Air Corps training procedure.

In the past there was very little agreement and a world of doubt as to the value, if any, of our commercial schools and manufacturers of civilian equipment except in the case of emergency. These very definite national defense assets were either under-estimated or entirely denied on official as well as unofficial fronts. Now in one bold stroke the Army will employ the facilities, experience, genius, and products of two of our basic phases of commercial aviation. It is interesting to note that the Army Air Corps considers it an economy move as well as a practical one, as revealed in the following War Department release:

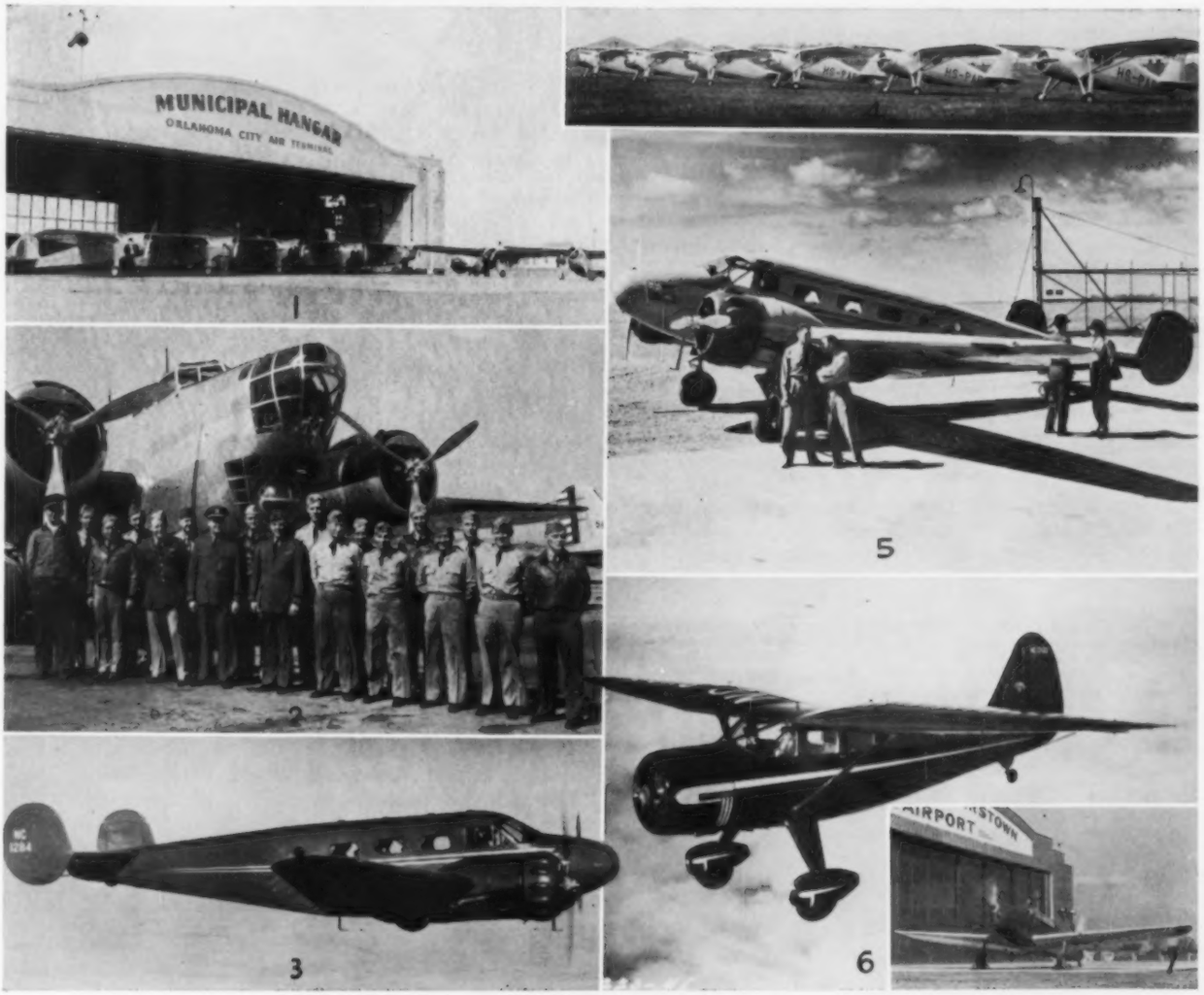
"The purchase of a standard or commercial airplane for use in training Army Air Corps student pilots in primary flying is due to the desire of the Army to use a standard commercial article instead of one especially designed for Army uses, where a standard commercial article fully meets the needs of the Army. By utilizing a standard commercial article, the War Department is assured of a source of supply of quantity lots of such articles without having to make special arrangements, such as are necessary where an article is specially designed for military use and not adapted to commercial uses. By purchasing a plane which is already in quantity production the War Department also will save the development costs of such a plane, which has already been amortized by the commercial producer, and does not have to be included in the price paid by the Army. The saving thus effected makes possible the procurement of a greater number of articles for the same amount of money."

Undoubtedly there will be substantial savings too from the primary training program under Army supervision at our accredited air colleges in addition to relieving the congestion at our Air Corps Training Center, where apparently activity now will be limited to intermediate and advanced training. With this set-up and with our civilian aircraft manufacturers receiving substantial orders from the Army for primary trainers, you can be sure the job will be done so effectively that we can logically expect the practice being continued on a permanent basis.

It will be impressive to see Wacos, Ryans, Stinsons, Beechcrafts and Bellancas and their kindred makes of airplanes chopping the ozone with the Army insignia thereon. And it will be most encouraging to realize that these pioneer companies, whose aggregate expenditures in research and development have amounted to millions of dollars, will finally receive a little profitable business from Uncle Sam—official recognition of their value to national defense and official admission that our domestic airplanes for commercial and private markets can be adapted to governmental service.

However, there are many other branches of our Federal government far removed from the military who could well adapt civilian aircraft to their various duties. There is great satisfaction in the Armys recent action, but we should not lose sight of the fact that the peace-time utility of the airplane still eclipses its use as a machine of war.

New Wings . . . .



1—Carl D. Winstead, Cessna Distributor for Oklahoma, has sold so many new Cessnas he couldn't get them all in one photograph. Those shown besides his own demonstrator belong to John Reinauer, automobile dealer, George Hales, radio supply house, Mark Huckins, prominent Southwestern hotel operator, Oren C. Myers, drilling contractor, Beverly Osborne, chain restaurant owner and Major Adkinson, sportsman pilot.

2—Future Air Corps maintenance instructors for new enlistments under the authorized air expansion program grouped in front of a brand new Douglas B-18A bomber during a tour of West Coast aircraft factories. Note revised nose section distinguishing the B-18A from its famous B-18 predecessor.

3—The War Department has awarded a contract amounting to $528,749 to the Beech Aircraft Corporation for a quantity of these twin engined Model 18's. Equipped with engines of higher horsepower than ordinarily installed on the commercial version, the Army's Beechcrafts will be employed as photographic ships.

4—These six Warner powered Fairchild 24's have just been shipped to the Aerial Transport Company of Bangkok, Siam. They will be used for air line operations in the Far Eastern kingdom.

5—Another recent Beech order is this Model 18D powered with two 330 Jacobs engines delivered to the Hudson Bay Company of Canada. Standing in front of the ship is chief pilot Harry Winny, left, with Canada's director of transportation, Paul Davoud. It is equipped for use on floats and skis as well as wheels.

6—Here is the new Stinson Reliant for 1939, showing evidence of many refinements that provide speeds of from five to ten miles an hour faster than last year's model and forty more pounds payload. Purchasers have their choice of Pratt & Whitney Wasp Jr., Wright or Lycoming engines.

7—This interesting little low-wing is a new member of the Fairchild family and is known as the M-62 primary trainer, built to Air Corps specifications. Powered with the 6-cylinder Ranger 6-410B-2A, rated 165 h. p. at 2450 r. p. m., the trainer cruises at 130 and has a maximum speed of 141 m. p. h. Cruising range is 520 miles, gross weight 2300 pounds, empty weight 1637 pounds. Slots in the leading edge of the wing and NACA slotted type alloy flaps are provided.

FEEDER AIRLINE OPERATION

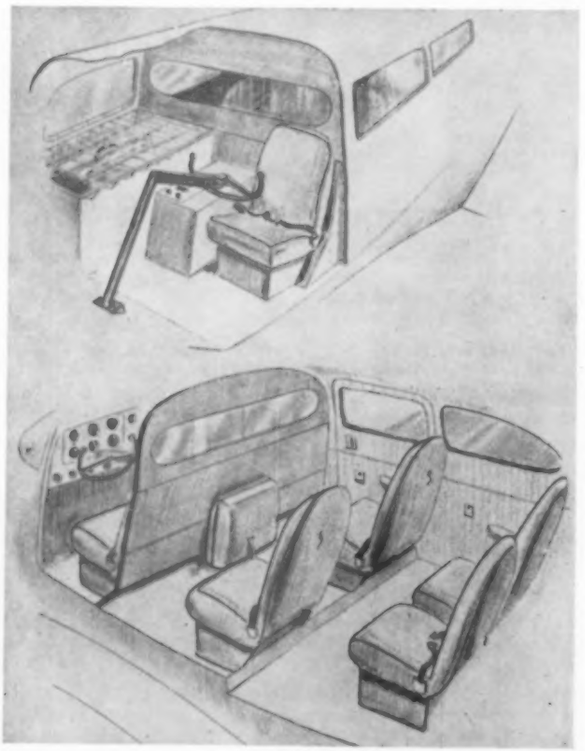
Part I.

What is a feeder airline? What regions and what size communities would be most economically served? What type of equipment and personnel would be employed? What changes must be made in existing regulations to permit their creation? Here are the answers.

VERNON DORRELL
Vega Airplane Company

THE term feeder airline has been too broadly used in many instances when describing the new type of scheduled air transportation which the industry has looked forward to during the past year for service to smaller or isolated communities. Literally speaking, many of the existing primary and secondary route operators are feeder airlines, i. e., they feed business to each other. When considering the definition in this light it is the writer's opinion that there are in existence only a few routes which could *not* be considered as feeder airlines.

It was interesting to note at the first national meeting for discussion of feeder airlines where, after two days of varied discussion and discouraging speeches, it was gradually realized that there were several interpretations of feeder airlines among the delegates who were in a position to present constructive material to the convention. On the third day of the meeting there seemed to be a common question on all lips, "What constitutes a feeder airline?". The meeting adjourned without a satisfactory definition. This situation prompted the writer to search for a new expression which would better describe the proposed feeder airlines. We have considered such expressions as "short line air carrier" and "short haul airlines," but these titles do not seem to suit the popular trend of thought, which leaves us the only alternative of continuing to define this type of operation as "feeder airline." The best approach to the question of definition seems to be a suitable explanation of the justifiable reasons for the establishment of feeder airlines and a discussion of the various operations and governmental and economic problems.



A designer's conception of a practical seating arrangement for the small feeder airliner.

A number of applications for Certificates of Convenience and Necessity to operate certain routes have been filed and are undergoing consideration at this time by the C. A. A. Some of these routes might logically be termed feeder airlines due to the short length of the proposed flights and the fact that the terminals are in centralized cities where traffic is fed to transcontinental or coastwide routes. However, since these applications were made with full consideration of the existing operating regulations governing established primary and secondary route operators, these routes cannot be truly termed feeder airlines. A route, regardless of its length and the territory it serves, cannot be considered as a feeder airline when its operations would be required to comply with all the existing air carrier regulations. Any airline which would be required to (1) use multi-engine airplanes requiring two pilots, (2) carry 300 pounds of radio equipment, (3) use aircraft with a passenger capacity in excess of ten, (4) serve cities, other than terminals, with an average population greater than 100,000, could not logically be classified as a feeder airline operation of the type we now have under consideration. Some of the routes now being operated, as well as those now under consideration, could well be considered as feeder airlines if the existing regulations were revised to permit reasonably simplified regulations.

A feeder airline would serve very few cities of 100,000. This type of operation would exist on business derived from small cities of 10,000 to 25,000 population, geographically situated so that they could be served by a straight line route, or, a circuitous route 200 to 500 miles in length, terminating at a base served by a major airline. Consideration should be given to the existing forms of surface transportation because, regardless of some theories, air transportation is not always the most rapid and/or efficient form of transportation: flights of less than 50 miles could not be considered as economical for either passenger, operator or the government, unless there were to exist some peculiar geographic or political situation brought about by terrain, seasons, internal strife, or inadequate surface transportation. Furthermore, it would not be a sound policy to establish a nation wide system of feeder airlines serving every village and hamlet. The feeder line system should be very carefully balanced in such a manner that the routes would not be competitive with existing feeders or secondary operators. A thorough study of the problem would indicate that there is a limited number of sections throughout the country where feeder airlines would be efficient and

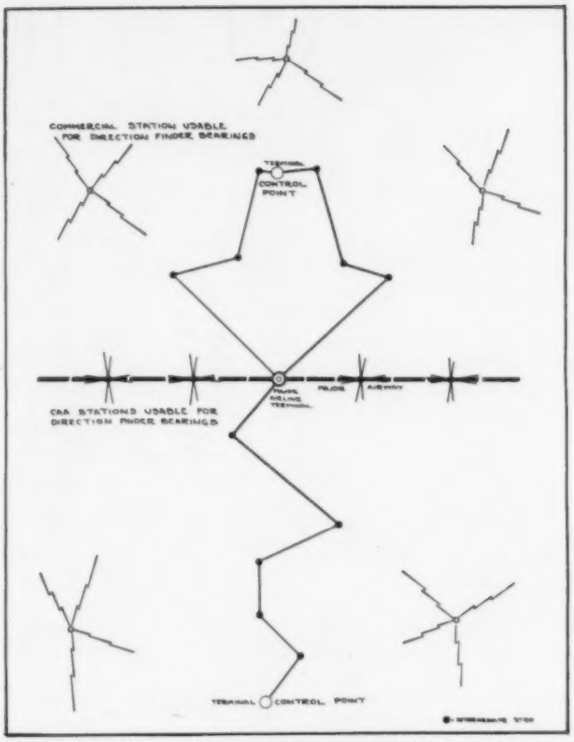
economically feasible. These sections exist in the central, mid-western, southwestern and southeastern states. Complete development of these areas would possibly lead to the further development of feeder airlines in other sections. In most cases the short airlines now serving the eastern and extreme western states cannot be logically called feeders and, therefore, would be classified as regular air carriers. Both coast areas are well served by air services at his time.

Aircraft

BEFORE proceeding with a discussion of suitable feeder airline aircraft it must be borne in mind that economy and safety are axioms which are vital to airline operations of any type. Therefore, it would be essential for feeder airline operations to reduce many of the extravagances related to major airline operation. To carry the overhead of operational frills would make it necessary to sacrifice some of the major items necessary to safe air transportation.

The ideal feeder airline aircraft should not exceed 11,000 pounds in gross weight. It should accommodate 4 to 10 passengers, according to the volume of traffic. It should be of a design which is highly manueverable and easy to handle because it would be necessary to operate with a single pilot. The pilot compartment should be arranged so that all controls, accessories and equipment would be accessible without unusual movements of the pilot. The passenger cabin would not be arranged for the comfort necessary on a thousand mile flight because this would be the airplane in which the passenger would complete the first or last 100 to 300 miles of his journey, which requires a relatively short period compared to a transcontinental flight. He should be made reasonably comfortable and necessary allowance made for the carrying of his baggage, but the furnishings of the cabin need not be as elaborate as those of the main line aircraft. Off-setting this lack of spaciousness would be the short flight involved, increased visibility and the atmosphere of chumminess with the other passengers and the pilot.

Speed is considerably sacrificed on short flights, therefore, extremely high speed would be of little value. In determining the desired level flight cruising speed, consideration must be given to economical power output and surface forms of competing transportation and the best schedule time possible by such means. It is our opinion that a schedule speed triple that of surface transportation is all that could be expected of feeder airline operation. To accomplish this the aircraft would be operated at a scheduled speed which would permit an economical power output. A schedule speed of 135 MPH would require approximately 155 MPH during level flight, which could be accomplished with some of the existing designs, using only 50 per cent of the available horsepower. The cruising range of a feeder airliner need not exceed 300 miles under normal conditions, however, tankage should be provided for a minimum of 500 miles for use when inclement weather conditions exist.


COMMERCIAL STATION USABLE FOR DIRECTION FINDER BEARINGS
CONTROL POINT
CAA STATIONS USABLE FOR DIRECTION FINDER BEARINGS
AIRWAY
TERMINAL CONTROL POINT

General arrangement of feeder airline routes and "off airway" aids available for navigation. Note the control points for issuance of flight clearances.

Equipment and accessories should include a simplified radio system, using only the power necessary for communications over the maximum distances between ground stations (approximately 100 miles). To the closest possible degree, radio equipment should be confined to a small number of units and the entire installation made as simple and light weight as possible. It is our opinion that 75 pounds would be sufficient allowance for the radio equipment of a feeder airliner. Ordinarily, the feeder airliner would not be operated under extreme adverse weather conditions and, therefore, the bad weather equipment could be reduced to a minimum or eliminated wherever possible.

Personnel

THE feeder airline would serve as an ideal training operation for younger pilots. Most major airlines are in need of a suitable training route to prove pilots who have been recently promoted to the status of first pilot

(Continued on Page 24)

The feasibility of operating safely through relatively short distances of overcast weather is illustrated here. The feeder airline would serve very few cities of 100,000, deriving most of its patronage from cities of 10,000 to 25,000 population.

ESBJERG TO ALBUQUERQUE

A major air line adds further proof to the tenet that mass education is the answer to future payload.

CLANCY DAYHOFF

AMERICA'S first Air Youth Project, completed last month in the bustling little city of Albuquerque, New Mexico, proved so successful that plans are now under way to extend the experiment to additional cities throughout the United States as part of a mass education program to bring "air consciousness" home to the American people.

The Albuquerque "laboratory test" of mass flights of high school students was carried out by Transcontinental and Western Air, Inc., with the co-operation of local educational officials and the approval of the U. S. Office of Education, Department of the Interior and the Civil Aeronautics Authority.

The purpose was to determine whether mass education of the nation's youth in the fundamentals of aeronautics, with actual flying experience for every youth of high school age in the country was feasible. This is what the experimenters found out:

That 95 per cent of the students in Albuquerque's High School and Parochial schools were able to obtain parental consent to the flights, and actually made the flight.

That as a result of the experiment with the students, two of every three parents became "air-minded."

That students in almost 100 per cent of the cases indicated that the "first trip bugaboo," greatest block to air-mindedness, had been eliminated.

Questionnaires submitted to the students before and after the flight were compiled and are being analyzed for a permanent record of the results of the Albuquerque tests, for use in similar projects in other cities.

THE idea of taking the high school population of a city up in the air as part of a program of educating the people of a nation to "air-mindedness" did not originate in the United States. It was first tried two years ago by the Danish Airways (det danske luftfartselskab) in the city of Esbjerg in Jutland.

The idea in that case was to make people more air-minded through their children, and thus stimulate traffic on the airline. Danish Airways supplied the planes and the city of Esbjerg supplied the children. There were about 5,000 school children ranging down to 10 years of age in the city, and more than 4,500 were taken up in flights. Within a short time the air traffic from the city of Esbjerg jumped about 400 per cent a month.

Thomas H. Beck, editor of Collier's Weekly, who has been an aviation enthusiast for 25 years, heard about the "Esbjerg Idea" and suggested it be tried out in the United States—not merely from the standpoint of commercial air traffic but with an eye to national air consciousness as a part of a national defense program.

He talked over the idea with Jack Frye, president of T. W. A., and as a result the airline agreed to underwrite the "laboratory test" at Albuquerque.

That city was selected because it was of moderate size —about 50,000 population—and lies on a high, dry plateau where flying conditions are excellent all year around. A new $1,000,000 Municipal Airport financed by government, city, and T. W. A. funds was rushed to completion in time for the flights, and T. W. A. sent pilots, technicians and its education director, John Vale, to Albuquerque to set up a "ground school" staff.

FOR a week lectures were carried on at the high school and parochial schools, and then one of the airline's big $130,000 Douglas DC3 transports was ferried down from Kansas City for the flights. Throughout the week of April 24-29 the plane made 97 thirty-minute flights, taking up about 20 students. There were a total of 1,759 students taken up, including those from parochial schools —all with the written consent of their parents.

After the flying was completed, T. W. A. experts and statisticians from Collier's went to work on the results. Questionnaires, containing reactions of parents as well as students, were sifted and analyzed.

Chief Pilot Otis Bryan lectures a group of Albuquerque high school students in front of a 1220 horsepower Cyclone engine prior to a 30 minute educational flight in a T. W. A. "Skyclub" Douglas DC-3 transport.

A preliminary check showed that the experiment had been amazingly successful. Parents wrote that they had been "afraid to fly" prior to the "test flights" but the enthusiasm of their children had "sold" them on air travel. Air traffic out of Albuquerque and inquiries concerning air travel increased amazingly the first week after the flights.

Glenn O. Ream, principal of the high school and an educator of eighteen years' experience, said the Air Youth Project was one of the most remarkable educational ideas he had ever encountered. "To learn to do by doing is the essence of education," Ream said, "and the air transport industry seems to have hit on the key to the problem of mass education in their field."

The students, all equipped with earphones during the flight, showed they retained vivid impressions and much of the information given them by T. W. A. pilots, radiomen, and technicians during the flight. The drone of the engines, the smooth ascent from the ground, banking, cruising—all became familiar experiences. The principle of following a radio range was explained and the actual conversation between First Officer A. E. Jaquish, and the ground dispatcher was carried to them through the ear phones . . . "Jaquish to Albuquerque, landing instructions, please" . . . "Albuquerque to Jaquish—wind west 15, Kollsman 30:15—land on runway number two—field is clear to land." The constant check on ignition, fuel mixture, propellor pitch, hydraulic and brake pressure—all was conveyed to the students by the most direct method possible, that of "listening in" on the actual conversation of the fliers and dispatchers.

THE results showed in the answers to the questionnaries and an even more immediate result showed in the reaction of the school officials. John Milne, superintendent of schools, announced plans to establish an aeronautical school at the Albuquerque High School, with at least 27 courses available for students.

He sent Lester Hitchens, vocational director for the city schools, to Los Angeles to work out plans for bringing technical experts to Albuquerque for the purpose of giving instruction. One of the most surprising results was the reaction of the students to the new courses; only 25 students expressed a preference for courses leading to a pilot's career, while the majority wanted instruction in technical and business phases of aircraft manufacture and air transport.

Clinton Hester, administrator of Civil Aeronautics Authority which supervises air transport in the United States, wrote Mr. Beck and T. W. A. officials:

"I cannot commend too highly the program for the education of school children of Albuquerque with respect to air transportation. I feel that your organizations are pioneering in a project which I trust others of the industry will enlarge upon because of its obvious benefits to aviation."

J. C. Franklin, T. W. A. engineer in charge of the project, immediately announced a survey of 23 other cities along the T. W. A. system to determine where similar projects would be most feasible. Many cities sent in requests for the project, offering the facilities of their educational departments, and organizations interested in the promotion of aviation offered to sponsor additional projects.

The Albuquerque flights cost less than four dollars per student, including use of the airline's equipment and personnel. T. W. A. considers that a cheap price for its contribution in the interests of keeping America first in the air.

A total of 1,759 youths participated in the first national air youth project sponsored jointly by T. W. A. and the Crowell Publishing Company. One of the most impressive features of the educational program was the actual radio hook-up permitting each student to listen in on flight procedure as carried on with two-way communication system of the modern air transport.

SPARTAN OVER THE WORLD

If you are one of those who believe that healthy growth in the aviation business is limited to military manufacturers and scheduled air lines, take a peek into the Spartan enterprise.

WELDON McKINNEY

NEXT time you are in Tulsa, don't miss paying a visit to the Spartan aviation institution—and institution it is, because its activities are too varied to go under the limiting title of company.

You will be impressed by the bee-hive activity of a well-managed aircraft factory filling orders for all parts of the world; you will have the opportunity of seeing one of the nation's outstanding schools of aviation turn out professionally equipped young men for our fastest growing industry; and you can't help absorbing the conviction that the middle-west is a natural for the production of airplanes and the training of men to build, fly and maintain them.

Behind the Spartan organization is the genius, personality and vision of William G. Skelly, whose success in the oil business over a period of forty-four years is too generally known to require elaboration. He was a pioneer of petroleum and now a pioneer in the aviation business. His friends will tell you that Bill Skelly's love for and faith in aviation got him into the business ten years ago. But Bill's own words tell the real story:

"I ventured out in '29 and got into the aviation business. Believe me, I've seen many growing pains. But I've stuck to it because I realized that some day it would be another great American industry that would offer opportunities to our young men and young women who had the courage and the persistency to stick and draw upon their imaginations." Bill Skelly's faith has finally been proudly justified and he has had a very definite leading hand in creating opportunities and a new field of endeavor for the young men of this nation.

Bill Skelly is also proud of the fact that his first love, the oil business, supports and stimulates the aviation business more than any other industry. Today, the mid-continent area of the United States and more particularly the southwestern part of the mid-continent comprises the country's greatest center of petroleum activity. Perhaps in no other industry is the demand for immediate action so omnipresent as in the oil industry with its tremendous investments constantly at stake. The oil executive's time is valued in thousands of dollars. The need may arise for his immediate presence hundreds of miles away; yet when he has arrived and a few minutes or a couple of hours see the completion of his task, it is just as necessary he be back at his office or at some equally distant point with the least possible loss of time.

SOME time ago the Spartan Aircraft Company, after long research and extensive engineering, introduced the well known all-metal *Executive* as a high speed private transport built along the same sturdy lines of the commercial airliners to give the business executive a personal airplane of great speed combined with perform-

Top: The "Eagle of Iraq," most luxurious Spartan Executive ever turned out of the Spartan Factory. It is destined for official government service in the Near East kingdom.

Center: Interior of the conventional Executive looking forward from the back seat. Note extremely good forward and side visibility.

Lower: Looking aft with one of forward seats removed to show cabin roominess and appointments. The "Eagle of Iraq" is a conventional Executive except for a complement of special equipment which includes Irvin seat type parachutes.

ance, comfort and safety features that would facilitate its practical use off established airports. The oil industry has been the Spartan *Executive's* biggest customer since its inception.

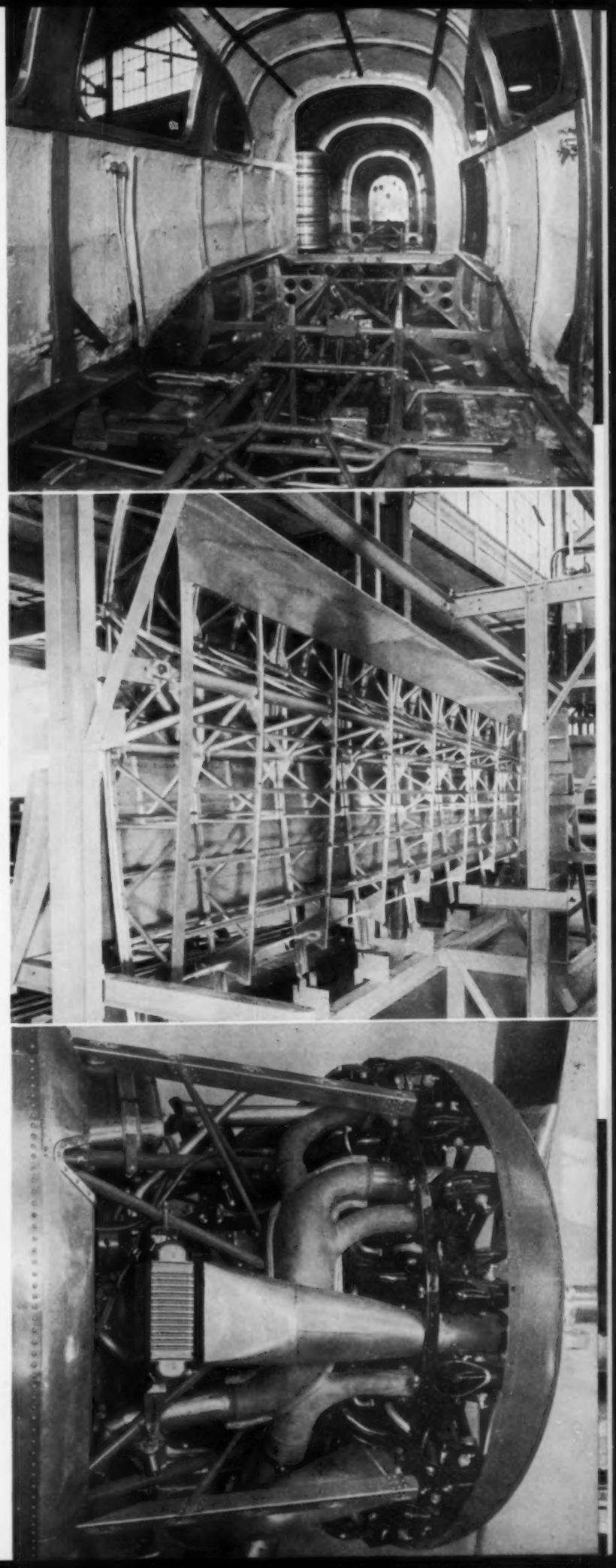
For drilling contractors such as the Olson Drilling Company, the Lee, Bodine and Claude Drilling Companies, Spartans are being flown thousands of miles daily, most of the time into otherwise practically inaccessible drilling locations. Jess Green, active director of the company, will go into his files and bring out letters from satisfied Spartan owners and tell you that they are the best salesmen. He will proudly display one from Art Olson, president of a well-known drilling company bearing his name, that states: "As our business requires us to have our airplane in readiness to go at all times, performance has been extremely gratifying to us." Jess will bring out another from Fred McConnell of the Lee Drilling Company to the effect that: "The specifications as to efficiency, comfort and economy as set out by your factory have not been exaggerated. Not only do we find that Spartan's built-in speed increases the proficiency of our transportation facilities, which is a major item in our business, but also we find our mileage cost very economical." Another letter Jess is proud of comes from Wm. H. (Bill) Bowerman, pilot for an oil field equipment concern, American Manufacturing Company. In it he states: "The *Executive's* inherent stability and ease of control make it one of the finest and safest ships for all-weather flying I have even flown. In a number of cases I have had to take the *Executive* in and out of very small fields with full load. It was a pleasure to find that in stalling into these fields, I had perfect aileron control even when the ship was in absolute stalled condition."

Another oil well supply manufacturer using the *Executive* in widespread operations throughout the nation is the Lucey Products Corporation. For the Halliburton Oil Well Cementing Company, whose operations reach practically every oil field the length and breadth of the country, and for the Seismograph Service Corporation, whose crews precede the drill not only in the United States but in South America, Asia and other far distant countries, Spartan *Executives* are daily saving hundreds of dollars and sometimes preventing shut downs in operations often too costly to contemplate. Then there's the Standard Oil Company of Ohio, the United Sugar Company of Los Mochis, Sinaloa, Mexico, the State Government of San Luis Potosi, the Transportes Aeros de Jalisco of Guadalajara, Mexico, and China Aeromotive Aerial Survey Company of Shanghai, China, to mention a few of the many other Spartan owners in other lands and fields of endeavor.

ONE of the latest *Executive* purchasers is the Kingdom of Iraq. It is the finest airplane Spartan has ever turned out of its Tulsa factory. Replete with luxurious appointments and the latest in equipment and accessories, the airplane, christened "The Eagle of Iraq," is truly "fit for a king." Among some of the special equipment is a Simon Radio Guide, Sperry Directional Gyro and Artificial Horizon, Waller Communicator, Irvin chair type parachutes, engine driven vacuum pump, shatterproof windshield, stabilizer abrasion shoes and fixed dual wheels.

The interior is done in red and gold. The engine cowl bears a broad red band outlined in gold, with a symbolic Eagle of Iraq in gold. The red and gold strip-

(Continued on Page 26)



Construction details of the Executive, picturing (above) the fuselage interior, (center) right wing panel and the engine mount with cowl removed.

New Equipment Review

VOUGHT-SIKORSKY XOS2U-1

(See Front Cover)

A NEW airplane, classed as an observation scout type, and designated by the Navy as the XOS2U-1, has been announced by the Vought-Sikorsky Aircraft Division of United Aircraft Corporation.

This new observation scout type, for which the Navy recently placed quantity orders, is a full cantilever, low-wing monoplane, with an all-metal monocoque fuselage and carries a crew of two. Power is furnished by a nine-cylinder Pratt & Whitney Wasp Junior engine rated at 400 horsepower for take off, and equipped with a two-bladed Hamilton Standard constant speed propeller. The plane is convertible either as a landplane or single-float seaplane; however, it was designed principally to be used as a seaplane, permitting it to operate from battleship or cruiser catapults, directing gun fire and to conduct long range observation scouting missions.

The new type Naval craft is distinguished by its advanced design and structural features, particularly in that it is a monoplane rather than biplane. Heretofore, requirements of small wing span, low landing speed and low weight for this type of aircraft have resulted in the use of the biplane design. For the first time, three aerodynamic factors combined in its development, have so improved the lift and controllability of the monoplane at low speeds as to render use of this type feasible. Two of these new developments are high-lift devices, the first being the new and highly effective "deflector plate" flaps used on the trailing edge of the wing, and the second, the use of "drooping" ailerons, so rigged that at low speed they serve the same function as flaps and further increase the lift of the wing. The third device consists of "spoilers" in the wings which supplant the ailerons at low speeds and provide the rolling moments necessary for lateral control. Excellent landing characteristics, speed, cruising range, and improved vision for crew are other important features of this relatively low powered monoplane.

The XOS2U-1 has an overall span of 26 feet, with a length of 33 feet, 10 inches as a seaplane, and 30 feet, 1 inch, as a landplane. Its gross weight as a seaplane is 4764 pounds, and as a landplane, 4542 pounds. Further details and performance figures may not be revealed, but it can be said the airplane fully meets the specifications imposed by the Navy department. On April 18, a contract for $2,103,800 worth of these airplanes was awarded by the Navy Department, which did not disclose the number of this type to be constructed. Work on the contract is now being rushed at the Vought-Sikorsky factory in Stratford, Conn.

George H. Dowty, head of Aircraft Components, Ltd., of England, pictured in front of the Ryan S-C metal cabin plane on which experimental Dowty shock struts were installed for demonstration purposes in the United States.

DOWTY LANDING GEAR

FOR the purpose of demonstrating a new type landing gear and other hydraulic components in the United States, George H. Dowty, president of an English manufacturing concern, has installed his company's unique shock struts on a Ryan S-C cabin monoplane and is making demonstrations with a view to establishing manufacturing facilities in this country.

The Dowty Aircraft wheel is a new-type landing gear shock strut which makes use of a horizontal rather than conventional vertical telescopic movement. The full cantilever landing gear structure is rigid with the exception of the short arm to which the wheel is attached. The oleo-pneumatic shock absorber is built into the wheel hub. To accommodate different aircraft weights, characteristics of the springing mechanism can be readily varied by adjusting the vertical wheel travel and changing the shock absorber inflation pressure, both variations being carried out by simple external adjustments.

Advantages claimed for the wheels by Dowty are standardization and interchangeability between all aircraft using the same size wheel; reduction in landing gear weights; and lowering of costs through standardization and more rapid production.

RYAN XPT-16

ADDING to its already well developed complement of primary training equipment, The United States Army Air Corps has announced the procurement of the XPT-16, latest development of the Ryan Aeronautical Company.

The Ryan XPT-16, newest military version of the popular Ryan S-T series of sport and military training planes which have been in commercial production for the past four years, is to be used by the Air Corps for primary training of cadet pilots.

The award of this Air Corps contract to the Ryan Company followed extensive flight competition held at Wright Field early this year between a large number of primary training planes in regular commercial production throughout the United States.

The Ryan Trainer for Air Corps service is a low-wing, open cockpit, metal fuselaged monoplane, seating pilot and instructor in tandem. Power is provided by a 125 h. p. Menasco C-4 inverted in-line air-cooled engine. The XPT-16 is the same basic design as the previous Ryan S-T models but with numerous improvements and unusually complete equipment suitable for military requirements.

There are but six pieces of skin in the entire fuselage, all of thick gauge 24ST Alclad Aluminum alloy. These sheets require no forming, being curved in only one direction from the original flat sheets. The rest of the fuselage consists almost entirely of seven bulkheads, all but one being simple flanged rings formed from flat

sheet. Number two bulkhead, carrying the landing gear and wire loads, is of steel.

Wings are constructed in four units for convenience of repair, maintenance and replacement. An NACA 2412 airfoil is used. Spruce spars, steel compression members and aluminum alloy ribs are used in the outer wing panels. Wings, including flaps and ailerons, are fabric covered. Ribs are stamped from 24ST Alclad and have flanged spar cut-outs and lightening holes. The entire nose of the wing is covered with 24ST Alclad carried well back of the front spar, assuring a true contour of the airfoil.

Performance figures are not available for release. General data of the XPT-16 is as follows:

Engine	Menasco C-4
Horsepower	125 h. p. at 2175 rpm
Wing span	29′ 11″
Length Overall	21′ 5⅜″
Height Overall	6′ 11″
Wheel Tread	66″
Tire Size	18 x 8—3
Tail Wheel Size	8″
Fuel Capacity	24 gals.
Oil Capacity	2 gals.

PORTERFIELD BIPLANE TRAINER

THE new Porterfield Biplane Trainer has now reached advanced stages of construction, according to Frank B. Johnson, Chief Engineer of the Porterfield Company. This plane is suitable for both foreign and domestic training programs because of its initial low cost and performance. Its wide range of power adaptation makes the new Porterfield an extremely "versatile" trainer, as it may be powered with the Warner 90 H. P., 125 H. P., 145 H. P., or 165 H. P. engines. The first plane will be powered with the Warner 145 H. P. engine and is entered in the training plane competition which will open at Wright Field, Dayton, Ohio, on July 7.

The Continental 65 H. P. Porterfield monoplane is now undergoing tests for Approved Type Certificate by the Civil Aeronautics Authority. Construction of the 75 H. P. Continental model is now in advanced stages and should also receive its test flights soon.

REARWIN CLOUDSTER

REARWIN Aircraft & Engines, Inc., have announced production of their new Rearwin "Cloudster," with optional power of Ken Royce 5F engine, 90 horsepower at 2250 r. p. m., or Ken Royce 7F engine, 120 horsepower at 2225 r. p. m. Features include dual ignition, altitude adjustment control, carburetor heater and metal tipped wood propeller.

Landing gear features consist of Goodyear mechanical brakes, 18 x 8—3 low pressure air wheels, Rearwin spring and hydraulic shock absorbers with long travel, and swivel tail wheel.

Two 17 gallon aluminum fuel tanks are incorporated in the wing assembly with individual fuel gauges in the cabin; one 2¼ gallon oil tank in engine compartment for 90 horsepower engine and one 3 gallon oil tank for 120 horsepower engine.

The Cloudster is equipped with the latest and necessary instruments and attractively designed appointments. Two large doors with sliding windows, 42 inch seat, "Air-foam" seat and seat back cushion, floor rug, Plexiglass windshield, and large luggage compartment which is accessable in flight add to the cabin features of the new airplane.

Other equipment includes navigation lights and battery, parking brake, fire extinguisher, first aid kit and airline-type adjustable safety belt. The new Rearwin is colored a Stearman vermillion with blue stripe, outlined with a gold pin stripe.

A newcomer for the U. S. Army Air Corps' primary flight training program to be carried on in commercial air schools is this Ryan XPT-16 military version of the well known Commercial Ryan S-T sport trainer. Power is furnished by the Menasco C-4 125 h.p. inline engine.

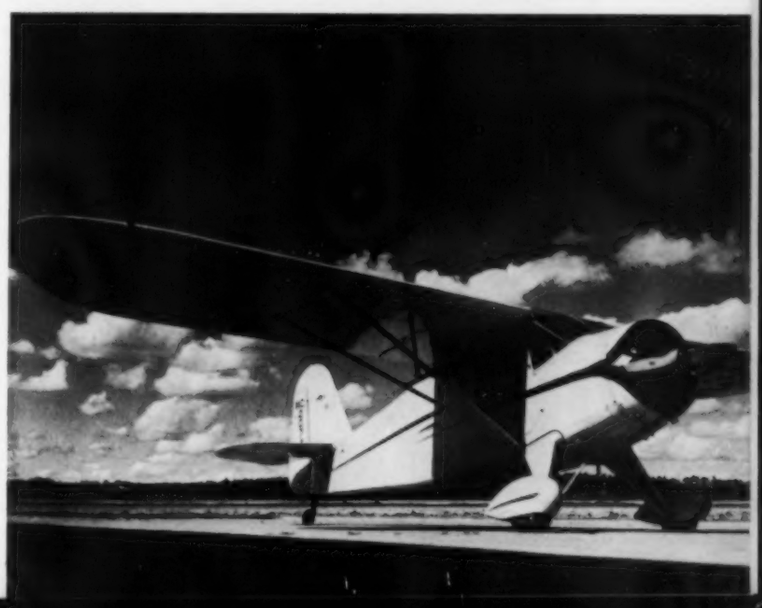
SPECIFICATIONS AND PERFORMANCE

	Model 8090 90 h. p.	Model 8125 120 h. p.
Wing span	34′ 1¾″	34′ 1¾″
Length, overall	21′ 6″	21′ 6″
Height, overall	7′ 4″	7′ 4″
Gross weight	1635 lbs.	1800 lbs.
Weight, empty	1000 lbs.	1040 lbs.
Useful load	635 lbs.	760 lbs.
Normal range	675 miles	625 miles
High speed	125 mph	145 mph
Cruising speed	110 mph	125 mph
Stalling speed (mph)	48	48
Climb at seal level (fpm)	750	1000
Service ceiling (ft)	14,000	17,000

BABB CARGO SHIP

THE Charles H. Babb Company, the largest airplane brokerage dealer in the United States, is now designing in their shops at Glendale, California, a new cargo ship with a useful load of 7½ tons. The new freighter is designed to carry tractors, trucks, mining machinery and other bulky pieces of machinery and is particularly designed to transport heavy loads in and out of small and inaccessible fields. It will aim especially at freight transport business in outposts of the world, in addition to possible regular freight service over main traveled routes.

The Rearwin "Cloudster" has been granted an ATC with the Ken-Royce 90 h.p. engine. Known as the Model 8090, the "Cloudster" cruises at 110 m.p.h. with a useful load of 635 pounds. The design is also available with the 120 h.p. Ken-Royce engine which increases the cruising speed to 125 m.p.h. and the useful load to 760 pounds.



News of the Month in Review

CURRENT OUTLOOK

• In a report released by Poor's Publishing Company, increased business volume and profits are indicated for both aircraft manufacturers and air transport lines during the balance of the year. Current equity prices of companies in the former division appear to place an adequate value on prospective near-term results and retention, only, of most issues, is advised. Securities representing air transport companies offer interesting appreciation possibilities, especially in the event that air mail rates are adjusted upward and made retroactive by the CAA.

The report stated that manufacturers of airplanes, engines and accessories stand to receive a substantial volume of business under the country's prospective armament program. Present plans are for a 6,000 plane Army air force, as against the 2,320 goal recommended under the Baker Board. Between now and July 1, 1939, roughly, $46,000,000 will be spent on contracts already awarded by the army. For the 1939-1940 fiscal year, $57,500,000 has been appropriated for Army and $47,000,000 for Navy aircraft procurement. Accordingly, nearly $151,000,000 already has been authorized by Congress. This will be raised to $192,000,000, moreover, if the national defense program is carried out strictly to the letter.

Pursuit planes are likely to represent the greatest number of purchases. Attack bombers, two and four-engine bombers, and primary trainers are likely to follow as next in order of importance in the program. Because of their unit costs, attack bombers presumably will constitute the larger dollar volume.

Exports of aircraft continue to play an important part in the manufacturing division, after accounting for more than half of last year's production. Until this country's armament program gets well under way, orders from abroad will continue to account for the larger percentage of total bookings. Amounting to approximately $20,000,000, exports of airplanes, parts and accessories during the initial 1939 quarter, were 40 per cent greater than in the corresponding period a year ago.

The French Embassy placed orders with United States aircraft manufacturers for $46,300,000 worth of planes, engines, and parts early in 1939, and purchased instruments and propellers in the amount of $13,700,000. Nearly $11,000,000 of this business was for engines, the greatest proportion ($9,100,000) of which went to United Aircraft's Pratt & Whitney division. Of the 615 planes

SPARTAN

Approved

By the Army Air Corps

FOR BOTH FLYING & MECHANICS

In the center of the Southwest, bright with sunshine and clear flying days the year round, SPARTAN'S location at Tulsa, "Oil Capital of the World," is in the heart of the Petroleum Industry, LEADING USER OF AVIATION EVERY DAY IN THE YEAR. Occupying two of the largest and most modern Hangars in the United States, SPARTAN facilities include modern Classrooms, fully equipped Machine, Sheet Metal and Welding Departments, Restaurant and Dormitories for students' well-being. Only latest types of flying equipment employed.

The highest possible endorsement of SPARTAN TRAINING is the decision of the Army Air Corps to use Spartan facilities for instruction of BOTH Flying and Mechanical Students in the Army Expansion Program. The Army recognized SPARTAN'S ideal location for all-year flying weather and country, instructing personnel, College or University day by day planned curriculum and modern facilities for both Flying and Mechanical Instruction. The reason the Army is using Spartan for Military Instruction is the reason you should first consider SPARTAN for YOUR Aviation Training to assure a successful career in Commercial Aviation, the goal attained by hundreds of SPARTAN Graduates.

SPARTAN SCHOOL OF AERONAUTICS, P. O. BOX 2649, TULSA, OKLAHOMA

Send me a copy of the NEW 1939 SPARTAN Catalog and Supplement describing in detail Spartan Flying, Mechanical and Radio Courses of Aeronautics and detailed living expenses.

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ADDRESS _____ CITY _____ STATE _____

ANY PREVIOUS FLYING EXPERIENCE? _____

Check below branch of Aeronautics you are most interested in.

☐ Flying
☐ Mechanical
☐ Radio Instrument
☐ Executive-Management

HOME OF THE DAWN PATROL

included in the contracts, Curtiss-Wright will produce 200 pursuits; North American Aviation, 200 trainers; Glenn L. Martin, 115 bombers; and Douglas, 100 attack bombers. Since most development charges on these export models have already been made, profit margins will be wider than on the prospective domestic Government business.

However, under the rewritten Tobey profit limitation bill, somewhat better profits are possible on the prospective Government business. This bill specifies that profits on future contracts may reach 12 per cent (compared with 10 per cent under the present Act). Moreover, manufacturers may be permitted to average, over a five-year period, losses on one contract with profits on another.

Reflecting receipt of both domestic and foreign orders, the industry's backlog of uncompleted business is substantially ahead of last year's sales. This relationship, as estimated for nine leading manufacturers, follows:

	Current Backlog	1938 Sales
Boeing	$ 15,000,000	$ 2,000,000
Consolidated	8,000,000	12,000,000
Curtiss-Wright	42,000,000	33,000,000
Douglas	48,000,000	28,000,000
Fairchild	1,000,000	2,000,000
Lockheed	33,000,000	10,000,000
Martin	38,000,000	12,000,000
North American	19,000,000	10,000,000
United	33,000,000	37,000,000
	$237,000,000	$146,000,000

MANUFACTURERS

Douglas Completes 350th Transport

• The 200th DC-3 air transport was completed and rolled off the assembly line at the Santa Monica plant of the Douglas Aircraft Company recently.

The new, graceful transport; its brilliant metal surfaces glistening in the sunlight, was proudly displayed outside the huge plant in a colorful ceremony before a group of federal, city, county and civic officials.

This event marks completion of the 350th commercial sky liner built by the Douglas Company. The plane, christened the Flagship "Oklahoma City" by Mrs. Mary Briggs, Postmaster of Los Angeles, is scheduled for delivery to American Airlines in Tucson, Ariz., where it will begin its transcontinental service.

In a similar ceremony held at the same plant in August, 1936, the first DC-3 was delivered to the American Airlines. The airline, 100 per cent Douglas equipped, now operates 50 transports, employs 2,311 persons including 266 captains and first officers, and has flown a total of 421,108,569 passenger miles in Douglas built aircraft.

Mass Production at Boeing

• Completion of a factory re-arrangement program providing a full-fledged production line of four-engine Army Flying Fortresses has been announced by the Boeing Aircraft Company, Seattle, Wash. The production line is highly similar to assembly line systems used in automobile factories.

Mass production methods in the manufacture of the formidable B-17B bombers on order for the U. S. Army Air Corps is now in full swing, and the first plane of the new fleet will be ready for flight shortly.

Under the new program of re-arrangement, the 22-ton bombers will emerge ready for flight when the production line is rolling at full tempo, with only a few days between the completion of each successive plane, officials stated. Such a production line for planes of this

SPARTAN Executive—THE Airplane With Which No Other Can Compare . . . the choice of business leaders the world-over, is also the choice of Kings! Delivery being made through the Baghdad office of Aviation Equipment & Export, Inc., of this SPARTAN "Eagle of Iraq" because of special equipment and luxury of Furnishings is probably one of the most elaborately fitted airplanes regardless of size. Cruising in excess of 215 miles per hour, the Executive is today THE WORLD'S MOST MODERN TRANSPORTATION with the safety, quietness and speed that ONLY ALL-METAL construction provides. Unexcelled in streamlined exterior, luxury and comfort of cabin interior, with performance of rapid climb, short landing distance and safety features pioneered by SPARTAN. The daily operation throughout the World of SPARTAN Executive's are proving an investment to their owners unknown to ANY form of transportation.

SPARTAN AIRCRAFT COMPANY
Builders of the Business Man's Airplane, the Spartan Executive and Military Conversion 7 W-F
TULSA, OKLAHOMA

TOMORROW'S AIR TRANSPORTATION TODAY

Consolidated Aircraft Corporation's 52-passenger long range flying boat equipped with two of the new 18-cylinder, 2,000 h.p. Wright Duplex-Cyclones. Designated as the model 31, the 25-ton craft accommodates a crew of five in addition to the heavy passenger load. It is of all-metal construction.

size and type is unprecedented in American Aircraft manufacturing, according to the announcement.

New Company to Absorb Security

● Organization of the American Aircraft Company which will take over the assets, good will and business of the Security Aircraft Company, Long Beach Municipal Airport, Long Beach, Calif., has just been announced. Management of the new company comprises, W. B. Kinner, Long Beach, President and Director; A. V. Trotter, Los Angeles, Vice President and Director; John P. Vezzetti, Los Angeles, Secretary-Treasurer and Director; D. E. Marshall, Los Angeles, Director and Superintendent in Charge of Production, and the following directors: Hugh M. Green, Long Beach, Chester B. Loomis, Jr., Los Angeles, and Paul B. Rolston, Los Angeles.

Included in the former assets of the former company are the manufacturing rights of Security airplanes which have been on the market since 1933, also the patented Security folding wing and the Security aircraft engine. Latest model Security airplane is the S1-B, a two-passenger training and sportsman low-wing monoplane, granted an approved type certificate in January, 1939. Orders for 15 ships of this type are on hand at the present.

W. B. Kinner has been actively engaged in the design, development and assembling of airplanes and airplane engines for approximately twenty years, and during this period has designed and developed five successful aircraft motors.

Martin Employment at New High

● With 6,539 workers currently employed at the Glenn L. Martin Company aircraft plant at Middle River, Maryland, near Baltimore, this figure represents an all-time high, according to a report issued by that company recently.

Compared to 2,676 employees a year ago and 3,480 employees six months ago, the new record represents an exceptional contrast in employment at the Martin plant.

The recent increases are attributed to completion on April 27, of a 440,000 square foot, brick, steel and concrete addition which makes the Martin factory the largest unit aircraft plant in the United States.

New Record Established

● Another world's record for light seaplanes in the second category class having less than 397 cubic inch piston displacement, was established April 22, by Dewey Eldred, Willoughby, Ohio, flying a Taylorcraft non-stop over a 2,000 mile kilometer course.

The distance of 2,000 kilometers or 1,242 miles was covered in 16 hours, 59 minutes. The ship used in the flight was a stock model Taylorcraft seaplane, powered with a 55 h. p. dual ignition Lycoming engine and was not "souped up" in any way.

The ship took off with 74 gallons of gasoline. Twelve gallons of fuel was carried in the standard Taylorcraft tank, and the balance of 62 gallons were carried in its Edo pontoons whose interiors had previously been shellaced for the purpose. With this extreme load of fuel, together with weight of pontoons and weight of pilot, which is 215 pounds, the little ship left the water gracefully with over six times its normal fuel load.

Mr. Eldred established his first record with this same Taylorcraft seaplane on January 7th (SOUTHERN FLIGHT, Jan. 1939), in a non-stop flight from Long Island to Daytona Beach, Florida. He stated that his objective for these flights was not merely to establish records, but rather to demonstrate the stamina, endurance and efficiency of this modern 55 h. p. airplane.

Dividend Announced by Borg-Warner

● A dividend of twenty-five cents ($0.25) per share on the common stock of the Borg-Warner Corporation, was voted by the Board of Directors at a meeting held in Chicago recently.

The dividend is payable July 1, 1939.

Grumman Amphibian Sale Reported

● The sale of two more Grumman "G-21A" Amphibians to Asiatic Petroleum Corporation has been anonunced by Gillies Aviation Corporation, sole sales representatives for Grumman Aircraft.

This sale brings the total to five Grummans owned and operated by the petroleum company. The new ships will be used for high altitude photography work in Dutch, New Guinea.

Favorable Gain Shown in Fairchild Orders

● Fairchild Aviation Corporation has announced unfilled orders amounting to $1,368,234, as of April 30, 1939.

A favorable comparison is evident, since unfilled orders as of April 30, 1938, amounted to $1,102,746, or an increase of $255,488. Unfilled orders as of December 31, 1938, amounted to $1,070,338. These figures represent gains of 24 per cent and 27 per cent, respectively.

Monocoupe to Release New Model Shortly

● H. Eichhammer, formerly with Aeronautical Corporation of America and the Fairchild Aircraft Corporation, has been appointed Sales and Advertising Manager of the Monocoupe Corporation, Lambert Field, Robertson, Mo., according to a recent announcement by Clare W. Bunch, President of that company.

This is one of the first steps of an expansion program designed by President Bunch to again place his company in the front ranks of private-owner aviation—a field which was pioneered by Monocoupe fifteen years ago.

Mr. Eichhammer's experience in aircraft sales and advertising is extensive and diversified; having been with Aeronca three years and with Fairchild Aircraft five years. This experience has acquainted him thoroughly with the private owner market and the sales and advertising problems it involves. With over 4,000 hours of flying time spent in sales work, he has acquired a wide acquaintanceship in this field.

Test work on the new Monocoach now powered with two 150 H. P. Menascos, is being rushed to completion and full performance details are expected to be released shortly. This 90-A DeLuxe model will be prominently featured in the Monocoupe sales campaign.

DC-4 Makes Flight With Full Passenger Load

● Receiving its Approved Type Certificate from the Civil Aeronautics Authority on May 10th, the DC-4, world's mightiest landplane, flew a record load of 54 passengers and a crew of 6 over the city and environs of Los Angeles. At the controls of the giant airliner, was Benny Howard, veteran airline and test pilot. Among those making the memorable flight were: Los Angeles' Mayor Bowron, Chamber of Commerce Vice President J. L. Van Norman, Los Angeles Times' Publisher Harry Chandler, Harry Crocker and David Hearst of the Los Angeles Examiner and Tyrone Power and wife, Annabella, of the movies. Another flight was made on the same day for the benefit of press representatives.

Finally the ship was turned over to W. A. Patterson, president of United Air Lines, for a flight to San Francisco, and later will be flown to United's base at Cheyenne, Wyoming.

Production Record Reported by Piper

● A new world record for production of commercial aircraft, especially in the light plane field, was established in a 30 day period recently when the Piper Aircraft Corporation completed and delivered 201 Cub airplanes. These 201 planes represent an increase of 208 per cent over the completion and sales of Cubs for the same period in 1938.

One Cub every hour and ten minutes is the production schedule being maintained by a double shift at the Piper factory where 475

employees are working, compared to approximately 200 employed at the same period last year.

Previous production records are also held by Piper Aircraft which delivered 123 Cubs in April. A backlog of 250 orders is reported by the company.

SCHEDULED AIR TRANSPORT

April Traffic Gains

• April traffic figures for the scheduled airlines operating in the United States has been announced by the Civil Aeronautics Authority. These figures show a marked increase over the figures for the corresponding month in 1938.

The airlines carried 118,687 revenue passengers in April, 1939, or 29.52 per cent more than in April, 1938, and 663,884 pounds of express for a total of 400,501,211 miles, an increase of 33.52 per cent and 33.55 per cent respectively. The revenue passenger load for April, 1939, was 54.25 per cent.

Airlines Discount Fares to Government Employees

• The Civil Aeronautics Authority has announced that seventeen of the principal domestic air carriers of the United States have filed notices of tariff changes which will provide a 15 per cent discount on one-way fares for Government employees traveling on official Government business. These tariffs are effective as of June 1.

In announcing these tariff changes the Autrority said that at a meeting held recently, it had enlarged the scope of its investigations in the so-called Air Travel Card plan of the airlines, to include this and other discounts.

Certificate Denied Feeder System

• Airline Feeder System, Inc., which has been operating between Newark, N. J., and Westfield, Mass., via Bridgeport, New Haven, and Hartford, Conn., has been denied a certificate of Convenience and Necessity by the Civil Aeronautics Authority. The feeder system sought a certificate under the so-called "grandfather" clause.

The Authority based its opinion of denial upon findings that from May 22, to August 22, the period set forth in the act during which adequate and efficient service must have been rendered to qualify under the "grandfather" clause, Airline Feeder System had scheduled only 14 round trips. Other findings revealed, according to the Authority, that the system had carried out only 9 of these trips and transported only 11 revenue passengers and no property except baggage. The entire operations during this period produced a revenue of only $105.25, as against operating costs of $18,930.37.

It was also revealed that during this same period, another air carrier had transported a total of 1,396 persons between Hartford and Newark alone. The opinion of the Authority, therefore, finds groundless the contention of the airline feeder system that its service was adequate and efficient to the traffic demands. The applicant contended that it had not developed traffic because of its financial inability to maintain promotional activities, and that its service was adequate to such demand as existed. The opinion points out that the applicant actually made connections only once a week at Newark, N. J., and no connections at all at Hartford, Conn., so that even such demand as existed had not been served.

Third TWA Schedule Expansion

• Vincent P. Conroy, Vice President in charge of traffic of Transcontinental and Western Air, Inc., has announced effective recently, the third major schedule expansion of the year for that company, following a rush of summer air traffic which reached an all-time high for the airline in May. The expansion represents an increase of 22 per cent in flying miles operated by T. W. A. over the same period in 1938, and an increase of 24 per cent in passenger seat miles.

The new schedule increases the airline's monthly flying load by more than 1,060,000 seat miles and will include two new non-stop flights between New York and Chicago. This increase brings the total number of flights between New York and Chicago to 16 daily.

Three new routes totaling 959 miles are being sought by Transcontinental and Western Air, according to a recent announcement by Jack Frye, President. The new routes, for which application for certificates of convenience and necesisty have been filed with the Civil Aeronautics Authority in Washington, are: Indianapolis-Fort Wayne-Detroit, 235 miles; Cincinnati-Dayton-Toledo-Detroit, 224 miles; and Detroit-Columbus-Wheeling, W. Va.-Washington, D. C., 500 miles. Upon issuance of certificates by the Authority, the company will operate modern Douglas equipment over the three new airways.

United May Purchase WAE

• United Air Lines is negotiating an agreement to purchase the majority of the capital stock of Western Air Express, according to a recent announcement by W. A. Patterson, President of the airline. In accordance with the Civil Aeronautics Act, such purchases of stock would be subject to approval of the Civil Aeronautics Authority; that

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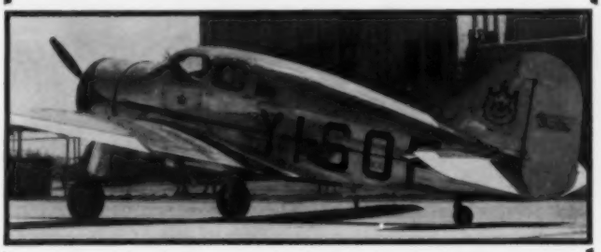
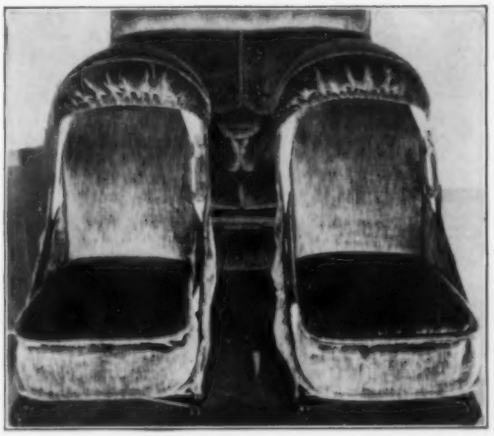


This plane is one of the most elaborately fitted ships ever built, irrespective of size.



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body having jurisdiction over such transfers and agreements. The stock would be purchased from William A. Coulter, Philadelphia, Pa., Boettcher-Newton interests of Denver, Colo., and Alfred Frank, Salt Lake City, Utah. Proposed price is either one-third shares of United Air Lines, or at the option of the holder of Western Air Express stock, one-sixth of a share of United Air Lines plus $1.66 cash.

United Air Lines is prepared to file a registration statement with the Securities and Exchange Commission in Washington covering the proposed issue of the necessary shares of capital stock of United Air Lines. When the registration statement becomes effective, United would afford to all stockholders of Western Air Express an opportunity to agree to sell their shares on the same basis as the agreement now proposed to the holders of a majority of the shares.

All-Time Record for TWA

• Transcontinental And Western Air, Inc., reports an all-time monthly record in passenger traffic during May, with a peak load of 9,000,000 passenger miles flown over the coast to coast system of the airline. This is an increase of 30 per cent over April, this year, and 36 per cent over May, a year ago. Actual passengers carried showed an increase of 37 per cent over April and 46 per cent over May, 1938.

The report, issued by V. P. Conroy, Vice President in charge of traffic, showed that 8,982,392 passenger miles were flown during May as compared to 6,884,716 in April. This figure represented an increase of 13 per cent over April in actual plane-miles flown.

It was the third successive month this year that T. W. A. passenger traffic has shown substantial increases over previous months and the corresponding months last year. The gain began in March when the airline inaugurated a transcontinental and inter-city "commuter" service offering 16,000,000 seat miles monthly. On May 1, this figure was increased to 17,000,000 seat miles per month. When the new traffic program, costing T. W. A. $1,075,000 for the year, was announced in March, Conroy predicted a 20 per cent upswing in business. His prediction has been exceeded so far this year.

PERSONAL NOTES

• At a meeting of the T. W. A. board of directors held in Kansas City recently, VINCENT P. CONROY of Salt Lake City, Utah, who only a year ago joined T. W. A. as salesmanager, was elevated to the post of Vice President in charge of Traffic and Sales, according to an announcement by executives of that corporation. Mr. Conroy has been engaged in airline traffic since 1925 when he resigned from the United States Navy, after serving on both the Atlantic and Pacific coasts since his graduation from the Naval Academy at Annapolis in 1923. He has been associated with National Air Transport, Universal Air Lines, United Air Lines and Eastern Air Lines. Mr. Conroy served as traffic manager in New York City for United and Eastern prior to his association with T. W. A.

• WILLIAM (BILL) MAXFIELD, widely known by pioneer Army Air Corps and commercial airline flyers and officials, has been appointed superintendent of maintenance for the entire system of Transcontinental and Western Air. Maxfield, who 20 years ago was maintenance foreman for the United States Army Air Corps at various bases, will make his headquarters at the T. W. A. Kansas City base. Maxfield succeeds Walter A. Hamilton.

• WALTER A. HAMILTON, pioneer maintenance engineer and airline official, has been appointed to the executive staff of Douglas Aircraft Company. The appointment becomes effective June 1. Until his resignation from Transcontinental and Western Air, announced in Kansas City recently, Mr. Hamilton was superintendent. The new Douglas executive's start in aviation dates back to 1925 when Jack Frye, Paul Richter and Hamilton were officials of the Aero Corporation of California, pioneer aviation company. He is widely known as a technician, maintenance engineer, airline executive and expert in maintenance costs and practices.

• Entering aviation 7 years ago as a T. W. A. mechanic's helper, ROBERT ZIMMERMAN has been awarded the Alfred P. Sloan $2750 Foundation Scholarship at the Massachusetts Institute of Technology. Zimmerman graduated in Engineering at Purdue University in 1932 and began as a "grease monkey" with the airline. In 1934, he was made Project Engineer, and has represented his company in the construction of many important airports, including the new $35,000,000 North Beach Field at New York. Mr. Zimmerman will study business administration and economics beginning June 15th at M. I. T.

• JAMES HOWARD KINDELBERGER, Los Angeles, Calif., President of General Aviation Manufacturing Corporation, Baltimore, Md., and North American Aviation, Inc., New York, N. Y., was recently awarded the honorary degree of Doctor Of Engineering at the 84th Commencement Exercises of Polytechnic Institute of Brooklyn, N. Y.

• O. H. EICHHAMMER, formerly with Aeronautical Corporation of America and Fairchild Aircraft Corporation, has been appointed Sales and Advertising Manager of the Monocoupe Corporation, Lambert Field, Robertson, Mo., according to a recent announcement by Clare W. Bunch, President of that company. This is one of the first steps of an expansion program designed by President Bunch to again place his company in the front ranks of private-owner aviation—a field which was pioneered by Monocoupe fifteen years ago. Mr. Eichhammer has had several years experience in sales and advertising work.

• D. W. TOMLINSON, widely known aviation engineer and research pilot for Transcontinental and Western Air, has been appointed Chief Engineer for that company, according to an announcement by Paul E. Richter, Executive Vice President. As Chief Engineer, Mr. Tomlinson, who is known for his high altitude experimental flying at 30,000 feet, will be in charge of T. W. A.'s newly established engineering department. He will have supervision of the research development and engineering activities of the company. Mr. Tomlinson will be remembered as leader of the Three Sea Hawks and member of the Navy Highhat Squadron and is one of aviation's most colorful characters.

• ARTHUR LINDSEY STEWART, San Francisco, Calif., former Assistant General Passenger Agent for Alaska Steamship Lines, has been appointed Manager of a new Foreign and Agency Department of Transcontinental And Western Air, Inc., as announced recently by Vincent P. Conroy, Vice President in charge of traffic and sales. The appointment becomes effective July 1. Mr. Stewart has had 19 years experience in transportation. His headquarters will be Kansas City, Mo.

Ports of Call

Correspondence from the Airports and Airways

Amarillo, Texas

Braniff's Fort Worth-Dallas Traffic Increases
Civil Aeronautics Authority Completes Airway Lighting

Thornton Oxnard has traded his well-equipped Beechcraft to a Lubbock flyer and has taken in return the speedy little Cessna Monoplane that formerly was the property of Fred Smith and Harold (Nick) Carter. There's one chicken that has come home to roost.

Charlie Boyd, operator of Municipal Airport, has re-conditioned the faithful Cub until it looks and acts like an altogether different plane. Tried to get him to put lace curtains in the windows, but he balked at this. It is painted a very becoming red and cream now.

The Civil Aeronautics Authority has been doing things for us up here. They have completed lighting the airway between here and Fort Worth, over the route used by Braniff Airways.

Included in the improvements slated for the near future are installation of ultra-high frequency radio station location markers at several points, including Amarillo. They cost about $3,000 each.

Also due for action soon is the plan to equip several airports in the state with specially devised gasoline-driven generators to provide standby power in event of failure of commercial power sources at the stations. Power failure automatically cranks up the standby power and keeps it on for ten minutes after commercial power has been restored. Amarillo will get one.

Figures released by Braniff Airlines for April show that this year there has been an increase of 68 per cent over the same month last year in traffic between here and Fort Worth-Dallas. During April of this year the two daily round trip schedules have totaled 280,943 revenue passenger miles, compared to 159,139 revenue passenger miles for April, 1938.

Biloxi, Mississippi

Piper Aircraft President Makes Tour of State
New Luscombe 200 for Coast Guard Base
Biloxi Airport Under Construction

W. T. Piper of the Piper Aircraft Company dropped in last week flying a Continental Tandem Trainer of his manufacture on a casual trip visiting his friends and seeing the South as the Cub flyers see it. He spent the night in Biloxi and enjoyed an excellent seafood dinner for which this coast city is well known. Mr. Piper left the following day eastbound into Florida to visit his youngest son and family at their home in Ft. Lauderdale. Besides his outstanding contribution to flying, in the manufacture of a fine airplane he has brought a wonderful personality into an industry that of late is being submerged into "big business."

The local coast guard unit, aviation section, has just acquired another ship. This time a landplane, built by Consolidated in their customary rugged fashion. It is a training plane with a Lycoming 200 and will be used mostly for instrument and acrobatic training. Already it is becoming a familiar sight over the city more often wrong side up than right. This is a fine addition as it gives the boys a chance to keep their hands in for acrobatic and sudden maneuver work without the taxpayers taking a beating in a larger ship.

Lt. McCaffery of the local Coast Guard Unit, who not long ago came here from the Salem, Mass., base, is now off again. This time, to Pensacola, where he will be an instructor. This base loses a fine fellow and a top notch pilot.

Gulfport had an airshow Sunday, May 28th, and Bristow put on a nice act with Jimmy Doolittle's old hopped-up Hawk. Andy Anderson of Head, Miss., came down and with an old Cub 40 put on a startling act of how not to fly. Most of us want to know how did he fly? Besides those stunts, there was an exhibition of crop-dusting by the Cole Dusters of Head, Miss. The same acts and some new ones will go again at Hattieburg June 18th, where even a bigger day is planned. The Gulfport show was about over when a deluge rained out the patrons lined up for passenger hops. Much to the indignation of the operators.

Pascagoula is rapidly becoming a spot on the aviation map as the hangar has received the steel work and it looks as though it would be completed shortly. The Mississippi Aviation Association are the sole but proud owners of a Cub 40 there and hope it is but the first of many ships on the field. The club has been a great success with many of the local business men now flying and many of them getting various grades of licenses. Mr. Caples of the sea-going unit of the Coast Guard based there was the latest to receive his license.

Biloxi Airport, while in the throes of construction, is a tough looking spot from the air, there is a good south-east runway available or light ships can get in directly in front of the hangar in dry weather. What appears to be an east-west runway is actually under construction and is soft, so visiting pilots should not try to land or cross this section. Regardless of the construction, Biloxi will welcome any visiting pilot and every effort will be made to see that they get a ride into town and any help they may need. After the port is finished the field and service will be one of the best in the South. The work is under the supervision of John Swanzy, commissioner in charge of construction. He deserves a lot of credit for turning a morass into a fine airport.

Bob Wight sold his second seaplane with a 50 Continental motor to the well known seaplane pilot of Lake Charles, La., Ed Thorpe. This is Ed's second Cub on floats and he is well known for his sang froid on, over and around the water. His personal hangar on an island on Lake Charles is a fine example of what seaplanes have to offer the private owner in sport and pleasure flying.

Mr. John Steele, advance man and right-hand helper of Mr. Priester of Pan American Airways, stopped at Shushan last week to see about service and facilities for the third Boeing boat being ferried east from the factory. Mr. Steele is one of the earliest employees of the famous airline of the tropics and overseas route. His record and ability is worthy of note as it is men like himself that Pan American used for their foundation in building a world-wide network of airways.—*W. O. "BOB" WIGHT.*

Coffeyville, Kansas

Secretary of War Visits Airport
Inman Brothers Start Barnstorming Tour With Boeing 247

After overhauling and conditioning their 27 passenger Boeing and receiving a new license from Inspector Illich, the Inman Brothers have started their barnstorming tour for another year.

The O. C. S. Manufacturing Company has purchased a new Lockheed 12. Lynn Berentz has purchased a Taylor Cub from H. G. Harper of Joplin, Mo. There are so many locally owned planes now that our large hangar is too small to accommodate all of them.

Secretary of War Harry Woodring was a recent visitor in his personal Douglas DC-3. Mr. Woodring is quite a frequent visitor since he has relatives living near here.

Leo Strickland, flying a new Cub from the factory in Lockhaven, Pa., to Alva, Oklahoma, stopped here for gas. Aubrey Keif of the Texas Company and George F. Ryan of the Mid-Continent Airlines were in flying a new Beechcraft.

Coffeyville Airways Corporation has recently employed Bartley Reinhardt to assist airport manager Berentz with his student training. The Airways report the following solos: Timothy Dugan, Jim Dugan and J. A. Beidler, a 58 year old flyer, who is the oldest pilot in town. Miss Eve Ann Hayter, a school teacher, soloed the Aeronca through instruction of Hank Duncan. Miss Hayter is the fifth woman to solo through instruction from Hank.

Jess Jones has sold his Wiley Post biplane to Joe Durham of Okemah, Oklahoma.

Henry Chapman, well-known operator on New Orlean's Shushan Airport, recently took delivery on the first 65 h.p. series Aeronca Edo-equipped Seaplane described last month in Southern Flight.

Inspector Illich found more business here than he could handle in one day recently. He re-licensed the Inman Brothers' Boeing 247, the Cavalier belonging to Gerald Eden, and Sid Caraway's Porterfield. Lee Ferguson successfully passed his tests for a commercial license, Roy Sage was awarded his private ticket, and Rolly Inman received his rating on the Lockheed 12.—*HAROLD E. HAGGARD.*

Fort Worth, Texas

Delta Air Lines Tops Quota
Students Under Government Program Graduate

Delta Air Lines topped their April quota by 6.9 per cent which is the second highest since the line moved its western terminus to Fort Worth in March of last year, according to Chas. P. Knecht, local manager of the line. An increase of 38.4 per cent was shown over April of last year. The increase is attributed to improved service into the Southern States and additional connections to New Orleans, La., and Tampa, Florida.

C. T. Tolpo, manager of the Airway Traffic Control department, has recently returned from Chicago after attending the semi-annual conference. Mr. Tolpo reports that a great deal was accomplished regarding recommendations in improvements in the technique of the Airway Traffic Control centers. Since the department had its inception recently, the department managers are well pleased with the progress shown.

B. H. Blankenship, who recently acquired his solo license, has purchased a Luscombe.

Vernon "Johns" Johns, airport newstand manager, has recently installed a popcorn machine. He insists that all birdmen eat lots of popcorn as it is easy to carry. He further states that your credit is good "if you don't fly in bad weather."

Quite a few of the students from North Texas Agricultural College who recently began their training under the Government program, have received their licenses, according to Ed Ritchey, flying instructor. The remainder will receive their licenses within the minimum allotted time. Inspectors Mulligan and Meadows attended the special program for the graduates.

Kersey Flying Service reports a large number of students recently and is kept quite busy. Frank Miller has also been quite busy with students. Happy Landings—remember, any landing is a good one if you can walk away from it; just ask Lester Byrd, of Byrd Glass Company. Also, Harold Stevenson, of the School of Aviation of Medicine, Cheyenne, Wyoming.—*MARGARET EWING.*

Miami, Florida

Aircraft Factories Probable for Miami
"Florida Aviation Day" Planned at New York's World Fair

The main topic of discussion around these parts right now is the coming air tour to New York. Each year in the past, Florida has had her air tour within the state, each year getting more and more successful. This year, instead of staying within the confines of the state, the entire tour will go to the New York World's Fair, spending three days there. During that time the Fair Committee will have a "Florida Aviation Day" at the fair, and the whole trip should be a successful one. So far as this correspondent is now able to learn, we will have all the various size and price ships that we have had in the past, but by the same token it is my opinion the boys flying the light stuff will really have to step on it, to keep up with the schedule now on file. The whole tour will consume nine days.

Outside of the air tour, the next best topic for discussion is the very probable starting of the new Miami Master Airport which now looks as though it may become a reality within the very near future. Plans have been pending for almost two years now, and first one thing and then the other has held back the actual start. But now, according to "Al" Hansen, Miami's Aviation Director, things are ready to pop and we feel sure when they do, we will make up for lost time. When this new master airport becomes a reality, it will undoubtedly be one of the finest, if not the finest in the United States.

In the same airport project is the contemplated building of a new hangar on the present Municipal Airport to replace the one that burned last year. This also looks extremely probable at this time.

Miami has been having an unusual number of inquiries from prospective airplane factory builders and we learn with much satisfaction that the new City Commission is very favorable to the inception of any and all the aircraft factories we can get in this area. The climate of Miami together with other natural facilities offers a grand one for the aircraft industry and we feel very sure we will be sporting some nice new shiny aircraft factories down here in the near future.—*KARL E. VOELTER.*

Oklahoma City, Oklahoma

Mrs. Kolp Appointed Editor for "99"
Miss Stevenson to Enter Spartan School

While making one of her regular visits to the city, Jimmy (Mrs. Chrales F.) Kolp, who lives in Electra, Texas, was notified of her appointment as national Editor of the "99" Club, the exclusive women's organization composed of those holding active flying licenses. While here, she attended a luncheon and style show presented by the Women's National Aeronautic Association.

With Mrs. Kolp, at the controls of her new four-passenger Cessna Monoplane, were her mother, Mrs. W. A. Gault, and Mrs. Charles Featherstone and Mrs. James M. Williams, both of Wichita Falls, Texas.

The new appointment for Mrs. Kolp will give her control of the widespread activity reports of women flyers and will necessitate her editing the "99" news sheet.

The Arrow Sport operated by Father Vander Grinten has been sold to G. E. Callison and J. J. Strickland, both of Kingfisher. However, the new owners will continue to fly the ship from this city.

Both St. Louis and Fort Worth have been made airway traffic control centers in this area. The St. Louis station will control more than 730 miles of civil airways in the mid-west while Fort Worth will have jurisdiction over 1,240 miles. In the Fort Worth work it is estimated that more than 165,000 aircraft movements will be handled yearly.

With a Waco F2 fitted for the purpose, Hardy Young, veteran air mail terminal operator, has resumed student instruction along with his regular flying and airplane work.

Young will make his base of operations for instruction the north hangar at the air terminal.

If by chance you see an attractive girl land at Municipal Air Terminal and taxi up to Haskell Shaw's hangar with the confidence of a veteran—it probably will be Miss Grace Stevenson. Miss Stevenson, whose home is in Holdenville, will graduate this week from the University of Oklahoma. Thereafter, she plans to enter the Spartan School in Tulsa for a 16 months course in commercial aviation. Miss Stevenson took her first flying lesson while a student at Lindenwood College, St. Charles, Mo., and got her private ticket two years ago.

The failure of Oklahoma to form an air tour to Mexico before the start of the summer rains did not slow down Lawler Reeves. He made up a tour of his own and recently headed the nose of his Stinson for Tampico and some big game fishing.

At the border he was met by Charles E. Baird, Braniff Airways' Vice President, who also heard the call of a screaming reel.—*BENNIE TURNER.*

Ponca City, Oklahoma

Improvements on Airport Near Completion
Aviation Club Making Sunday Morning Tours

The Thunderbird Aviation Club, under the guidance of G. M. McGunkin and Johnny Erickson, has been making early Sunday morning breakfast flights to neighboring airports. Arkansas City, Kansas, was the airport first visited where Tommy Smiers was the thoughtful host. Stillwater, Oklahoma, was the second airport visited recently. The visitors were treated royally by Al Guthrie and numerous citizens. Enid, Oklahoma, was the last place visited where Mr. Navin, new manager of Woodring Field, looked after the visitors' needs. These flights are composed of about twelve airplanes piloted by members of the Club and are made in the furtherance of flying and to become acquainted with flyers in this section of the state. All members report wonderful trips and enjoyed the hospitable receptions offered at each airport.

Lee Haugen, representative of a local oil company, has accepted delivery of a new Luscombe "65" which was purchased through the Brooker Air Service of Ponca City, the state distributor. This is the

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THE *Standard* OF AIRPLANE VALUES

● WACOS are the standard by which all four and five-place airplanes are judged. Wacos meet every need in this class.

The Waco *Model S* offers the greatest passenger-mile value—carries five persons more economically than any other airplane. The *Model C* is fast and luxuriously appointed. The *Model N* provides spacious comfort and high speeds—plus the recognized safety and handling ease of tricycle landing gear.

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WACO MODEL N Tricycle—Safer—easier to fly than any other 4-5 place airplane.

Full Coverage Insurance is available on new Wacos at a new low rate of 9 3/4%

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third Luscombe purchased by local flyers in the last three months. Other purchasers were Ralph Murray and Cooley Vanselous. Lee is taking a private pilot's test within the next few days so he can take all his friends for a ride. He will ask them to remove their shoes as he does not want to get the floor carpet soiled.

The WPA has been working on two runways for the airport and it is hoped this project will be completed in September. Additional boundary and flood lights have been installed and are now in operation. John Roush has constructed a barbed wire fence along the highway bordering the airport, that should be the joy of his life. It is practically rabbit proof. Upon completion of the runways and taxi strips and other improvements, an air carnival is planned as part of the dedication.

Johnny Erickson and Tony Scalone delivered the new Luscombe for Lee Haugen, but to date nothing has been said of the trip. The truth will out eventually.

Among those taking tests for different pilot ratings within the near future is Don Combs. He is after a solo ticket. Lee Haugen is shooting for a private pilot's certificate and Jack Mankins says he is going to get an instructor's rating if he has to fly to Washington for it.—*RALPH D. MURRAY.*

Shreveport, Louisiana

New Luscombe at Airport
W. N. A. A. Adjourns Summer Meetings

"That new Luscombe is a honey!"—at least that seems to be the general opinion around here. Cliff Stovall and Buster Batchelor, owners, flew it down from the factory. Cliff and Johnnie Mangum "sneaked" it off to New Orleans the other day. Nat Pedro seems to have made a neat job of his Curtiss-Wright pusher—all he needs now is the license. Walter George, Jr., accompanied by his wife and brother, was taken to New Orleans to see a specialist. They made the trip with Preston Jeter in George Barham's Stinson. There seems to be a mounting number of ships staked outside the hangar these days.

The local unit of the W. N. A. A. has adjourned its regular meetings for the summer. The Study Group is waiting for copies of the Civil Air Regulations to get down to real business. The new map in the lobby is not only useful but ornamental. Claude Hamel, airport manager, has two new pets—a fox and a baby racoon. Mabel Waddell and E. F. Glynn enjoyed Sunday afternoon shooting landings.

Pop Nagle is preparing his three dusters for the coming season.

Recent visitors include: Truman Wadlow, in a Beechcraft; Richard Hays, in a Waco; Robert C. Quinton, Beech; H. F. Clark, in a Stinson; H. A. Bott, in a Waco; and Roy Harding, in a Waco.

Here is a hint to out-of-towners: Why not come to Shreveport to see Barksdale Field, one of the world's largest Army airports—and stop at Municipal!—*MARJORIE HARDMAN.*

St. Joseph, Missouri

Concrete Runways Nearing Completion

Our two new concrete runways are about two-thirds completed and work is going forward rapidly. We have moved our wind tees to the Northeast corner of the field for better visibility.

Construction on a new and better road to the airport is progressing satisfactorily.

The local chapter of the National Aeronautic Association sponsored a model flying contest recently and most of the prizes were won by Junior college students.

Wheeler Farrish, former resident, dropped in a few days ago for a visit flying a Beechcraft. F. H. Graham flew a Waco cabin plane in from Shelton, Washington. Baroness Lisetta Von Kapri of Lousanne, Switzerland, stopped and inspected the airport recently on a 10,000 mile tour. Tommy Ogle, St. Joseph veteran pilot, had a narrow escape while hopping passengers in a Ryan—part of the under carriage folded up and forced him to land on one wheel. Fortunately, no one was injured in the landing.—*LOUIS M. NICHOLS.*

Wichita Falls, Texas

Fulcher Armstrong, Municipal Airport manager, has added a new Beechcraft to his flying equipment and will use it for personal and cross-country charter trips. Mr. Armstrong has made several trips to Dallas, where he recently inspected the new Stinson "105" and is very enthusiastic over the new ship.

Buddy Knight, local pilot, has been putting in some time on his Stinson since returning from his trip to the New York World's Fair.

The repair shop operated by the Wichita Falls Air Transportation Company, under supervision of O. L. "Shorty" Schwalbe, has been going full blast the last few months keeping the ships on the field and the surrounding territory in excellent repair. The shop is well equipped for both airplane and engine overhaul and repair.—*INA RAYE BALLARD.*

Feeder Airline Operation

(Continued from Page 9)

in charge of an aircraft. Most pilot material is now employed from the services of the Army or Navy where these men have, in most cases, been trained and subjected to two years active duty. After employment on an airline the pilot is usually subjected to further training and assigned as second pilot for a period of one to five years, depending upon the expansion of the company's services and the aptitude of the individual. In due course of time the pilot is checked out and assigned to a run as first pilot in charge of a $100,000 aircraft and twenty or more human lives. This is a considerable step in responsibility for a young pilot who has never served as pilot in charge of a commercial airliner filled with human cargo. He has completed the necessary training and passed certain minimum standards which, presumptively, qualify him to fly an airliner under all types of weather conditions. But, there have been no stepping stones in between to test his acceptance of this responsibility in gradual stages. How much easier the minds of the major airline management would rest if there existed a suitable training route to which this pilot could be promoted, where the operations procedures would be relatively simple and, in most cases, limited to visual contact flight and, of equal importance, using a smaller aircraft incorporating ease of handling, maneuverability and a simplified arrangement of the pilot's compartment. Naturally, the pilot would be subjected to greater responsibility on a feeder airline than his former job as second pilot on a major airline, but the feeder airline procedures would subject him to a second period of observation where another careful study could be made of his technical skill, knowledge, judgment, psychological reactions to first pilot responsibility, nervous fatigue and many other factors. Such a procedure of developing pilots would result in increased employment of flight personnel in the aviation industry for absorption of the graduates from our Army, Navy and commercial training centers and providing at the same time a high type of individual for feeder airline flight operation. Practically all surface transportation systems require that operating personnel graduate to the largest or fastest equipment by gradual degrees.

THE scheduled air carrier phase of aviation is a young industry and, therefore, has not faced the problem of, "What to do with personnel of increasing age." Surface forms of transportation move at a slower pace or can be regulated automatically, therefore, can use AGE because knife-edge judgment and quick action is not required of the personnel. Major air carrier operations DO require the keen minds and sound and quick judgment of younger personnel. The pace is rapid and the stress great. The stress becomes greater when major airline flight personnel approach the age of 45. He wonders, "Where do I go from here?" Result—hesitancy of much sound material to entering the industry due to the relative short professional life; broken morale in personnel of established major air carriers due to the outlook of the future; mental cracking up; possible accidents as result of psychological unfitness! How much easier the minds of major line flight personnel would rest if they knew it were possible to move over to a softer berth where the stress is less and where their useful lives could be lengthened for an additional ten to twenty years without an appreciable loss of income.

The above principle would apply equally as well to key ground personnel. Their major airline life is ordinarily ten years longer than that of the First Pilot but, nevertheless, 50 is the prime of life in most other occupations. If, when nearing the end of his major line usefulness, he could transfer to a feeder airline, there would be less probability of mental crackup near the end of his major line life with the resultant possibility of contributing to a disaster.

Excuse us for presenting one of the drab sides of our chosen phase of the industry but we feel that it is a factor which cannot be overlooked if we are to build air carrier organizations on a sound and accident free basis. It is definitely an issue which cannot be ignored.

We are not suggesting from the above that feeder airline services are to be supplied with inefficient employees. Inversely, this type of operator must preserve the axioms of safety and efficiency to a greater extent than other operators because one of the most vital functions of the feeder line would be in educating the public in appreciation of air transportation. Accidents as a result of inefficient operations could not be tolerated. Feeder airline operations could be relaitvely simplified: A greater percentage of the operations would be conducted in favorable weather conditions; the aircraft would be smaller, easier to fly and highly maneuverable; operations procedures would be greatly simplified. The ground station operations would be proportionately simplified. Naturally, such an operation would lend itself to the training and use of personnel with less experience or the absorption of major line personnel who are reaching the end of their useful service life in highly complicated major air carrier operations. Sound judgment and skill would continue to be axiomatic but needed fewer times under conditions of stress. This argument could be presented, "What happens when such personnel encounter unknown or unanticipated conditions of stress? Would they be competent to cope with the situation?" Before answering this question we must first consider the effect of mental "wear and tear" when constantly meeting conditions of stress. One may successfully cope with fifty such emergencies which does not necessarily guarantee that the fifty-first condition of stress could be successfully handled. The mind could be weary or the nervous system strained. Therefore, we could well assume that the mind and nervous system would store up the energy necessary for stress conditions if encountered less frequently. Ordinary operations most certainly maintain minimum degrees of any pilot's alertness and technical aptitude which would enable him to cope with an occasional major situation.

Flight Operations

AS STATED in the Personnel Chapter, most of the flight personnel of a feeder airline should emanate from training centers and major airline sources, where they would have been subjected to second pilot training following a reasonable amount of service in the Army, Navy or commercial phases. A smaller number of flight personnel would emanate from the sources of pilots retiring from major line service who would desire the eased tension of a simplified flight operation. Reiterating, the use of such personnel would not indicate a trend toward the use of deficient personnel on feeder airlines. Relatively speaking, the same degree of safety would exist, due to the simplified nature of the feeder airline operations, where the same degree of skill and experience would not be required to maintain this relativity. The older pilot would be unusually alert, due to the mental and physical relaxations afforded him by this

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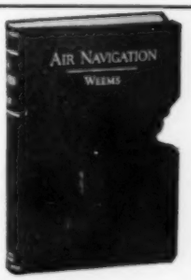

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type of operation. The younger pilot would be alert, due to his desire for further promotion which, in this case, would mean a return to the major airline after a certain length of service as first pilot on a feeder airline.

As previously stated, the route length of most feeder airlines would seldom exceed 500 miles which is only one-third the range of effective ground flight control from a key point. Therefore, most feeder airlines would operate with one key point of flight control. Since the operation would be limited, in most cases, to daylight flight it would be possible to operate this flight control station with a minimum number of personnel which would include two certificated dispatchers and one meteorologist. Due to the simplified procedures, radio communications at the central control point could, if necessary, be handled by the dispatcher on duty. Simplified forms would be used for flight plans, clearances and weather reports. En route clearances would be issued at strategic points in order not to exceed the time limit of weather reports shown on flight clearances, which is one hour and fifteen minutes. Ordinarily this would require approximately three en route clearances. This would also indicate that the ground radio stations need not be located necessarily at every point of call but only at those points which are strategically located for the issuance of flight clearances and the dissemination of governmental weather reports.

After clearance from a terminal station the feeder airliner would proceed by visual contact flight to the first intermediate station, which we shall term "Aville." Upon landing at Aville the pilot would taxi to the passenger terminal, stop the aircraft and engines in the usual manner. After a simplified entry on the flight plan form the pilot would disembark, opening the passenger door as he proceeds down the wing walk. The station attendant would be handed a memorandum indicating the weight to be placed aboard the aircraft at Aville, with which he would make the proper entry for a continuous weight control form. The pilot would proceed to the station office where telegraphic weather information for the next section of the flight would be attached to the clearance form issued at the originating control point. The ordinary ground operation at intermediate stops on a feeder airline should not require more than five minutes. During this time the pilot would complete the above duties and return to the aircraft, checking the passenger door lock as he proceeds to the pilot compartment, make the necessary visual inspection of the cabin and start the engines. This procedure would be repeated at Bville and Cville. Upon arrival at Dville the time limit of the first flight clearance would have expired making it necessary for the pilot to secure a new flight clearance at this station which would be equipped with two way radio communications. The plane would ordinarily be refueled and given a routine inspection at points of re-clearance by a qualified mechanic. In addition to the usual procedure of bringing the weight control from up to date, checking the procedure of loading and unloading, the pilot would also file another flight plan for the next section or return section of the trip. The remainder of the route would be similarly controlled until the plane's return to the originating terminal. This depicts a simple operation with one ground radio station at the opposite end of the route. Where additional radio stations are required at intermediate points due to the route length the procedure would be altered only when additional flight clearances are required by time limits or changeable weather conditions.

(To Be Concluded)

Spartan Over the World

(Continued from Page 13)

ing is continued down the side. The Royal Coat of Arms appears on the vertical fin and on the door and under the wing tips, appears the golden crown of Iraq. The effect of the deep red and the gold against gleaming metal is striking and in perfect taste.

The airplane itself is a Standard *Executive* product. Only some of the special equipment and the royal insignia distinguish it from its many prototypes. The wings and fuselage are built around a rigid welded steel tube monospar system, to which all major loads are transmitted. The "backbone" carries ninety per cent of all structural loads. Ten per cent is carried by the stressed skin structure. The fuselage is supported by heavy main bulkheads, bolted to the steel fuselage boom, stiffened by light riveted bulkheads, and covered with smooth 24 ST Alclad sections riveted in place.

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Mr. Skelly's aviation undertakings are not limited to the manufacture of airplanes. The Spartan School of Aeronautics, also under the able directorship of Jess Green, is an integral part of the enterprise and occupies two of the large modern hangars on the Tulsa Municipal Airport with other school buildings adjacent that include dormitories, shops, classrooms and a restaurant. The school's "Dawn Patrol" is known far and wide and with the recent establishment of the Latin-American Division, scores of boys are enrolling from the nations to the South of us. Situated as it is in the center of flat, open country surrounding Tulsa and in the midst of a climate zone affording year 'round flying weather, Spartan is indeed located in one of the Southwest's most ideal spots for all branches of aviation instruction and manufacture. There're no severe winters, fogs, mountains, haze or smoke around the clean, thriving metropolis that is Tulsa. And the Army Air Corps appreciates the fact; for just recently Spartan was chosen as one of the several schools for primary training of Army pilots under the new program to get under way in July.

Radio listeners in the middle-west have long been tuned to the Skelly Oil Company's radio programs, notably the "Air Adventures of Jimmy Allen" and recently the "Air Adventures of Captain Midnight." No southwestern program has more listener-appeal. But more pertinently, no rgeular program in the nation has ever boosted so well this business and sport of flying. And Bill Skelly—oilman, airplane manufacturer, radio station owner and one of the first citizens of Oklahoma—will tell you that his hopes and faith of ten years ago have at last come true. "Just look around," he says, "at the flying business today—and there's your proof!"

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